

WEST**Freeform Search**

Database: US Patents Full-Text Database US Pre-Grant Publication Full-Text Database JPO Abstracts Database EPO Abstracts Database Derwent World Patents Index IBM Technical Disclosure Bulletins

Term: fluorinated alkyl same alkenyl same liquid crystal\$

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Search History

DATE: Thursday, October 24, 2002 [Printable Copy](#) [Create Case](#)

Set Name Query
side by side

DB=USPT,JPAB,EPAB,DWPI,TDBD; PLUR=YES; OP=ADJ

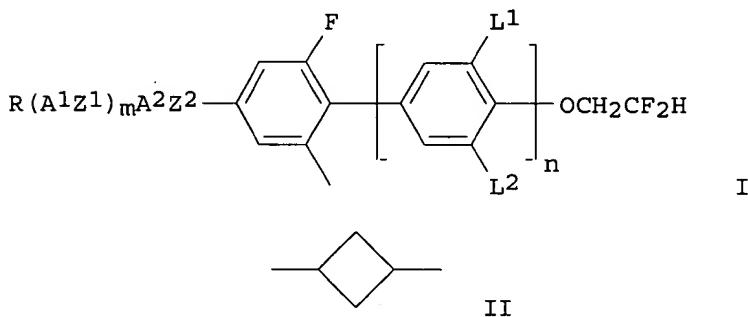
<u>Set Name</u>	<u>Hit Count</u>	<u>Set Name</u>
result set		
L5	3	<u>L5</u>
L4	0	<u>L4</u>
L3	0	<u>L3</u>
L2	1	<u>L2</u>
L1	963	<u>L1</u>

END OF SEARCH HISTORY

AN 1995:578518 CAPLUS
 DN 122:326677
 TI Liquid-crystal composition for display device
 PA Merck Patent G.m.b.H., Germany
 SO Jpn. Kokai Tokkyo Koho, 97 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07C043-225
 ICS C07C069-75; C07C069-753; C07C069-757; C07C069-773; C07C069-92;
 C07C255-37; C07C323-10; C07D239-26; C07D239-34; C09K019-10;
 C09K019-30; C09K019-34; C09K019-54; G02F001-13
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)

FAN.CNT	2	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI		JP 06329573	A2	19941129	JP 1994-96668	19940510
		DE 4315371	A1	19941117	DE 1993-4315371	19930510
		DE 4338164	A1	19950511	DE 1993-4338164	19931109
		JP 07145099	A2	19950606	JP 1994-149687	19940630
PRAI		DE 1993-4315371		19930510		
		DE 1993-4338164		19931109		

GI



AB A liq.-crystal compn. for an electrooptical display device contains a benzene deriv. represented by the formula I [R = H or C1-15 alkyl or alkenyl which may be substituted with CN, CF₃, or halogen and contains O, S, CO, CO₂, OCO, OCO₂, or II; A₁, A₂ = trans-1,4-cyclohexylene, 1,4-phenylene, 1,4-cyclohexenylene, 1,4-bicyclo(2,2,2)-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl, or 1,2,3,4-tetrahydronaphthalene-2,6-diyl with some of the groups substituted with F atoms; Z₁, Z₂ = CO₂, OCO, CH₂O, OCH₂, CH₂CH₂, CH=CH, or C.tplbond.C with the proviso that one of Z₁, Z₂ = (CH₂)₄ or CH=CHCH₂CH₂; L₁, L₂, L₃ = H or F; m = 0, 1, or 2; n = 0 or 1].
 ST liq crystal compn benzene deriv display
 IT Liquid crystals

RL: TEM (Technical or engineered material use); USES (Uses)
 (benzene derivs. as)
 IT Optical imaging devices
 (electrooptical, liq.-crystal compns. contg. benzene derivs. for)
 IT 76802-59-0 76802-61-4 81711-13-9 84816-56-8 102714-93-2
 106349-49-9 128140-58-9 136903-59-8 163002-76-4 163002-77-5
 163002-78-6 163002-79-7 163002-81-1 163002-82-2 163035-69-6
 163035-71-0 163035-72-1 163180-75-4 163425-20-5 163425-21-6
 163425-22-7 163425-23-8 163425-24-9
 RL: TEM (Technical or engineered material use); USES (Uses)

(electrooptical display device using liq.-crystal compn. contg.)

IT 163002-80-0 163035-70-9 163180-69-6 163180-70-9 163180-71-0
 163512-30-9 163512-32-1 163578-91-4

RL: TEM (Technical or engineered material use); USES (Uses)
 (liq.-crystal compn. for electrooptical display device)

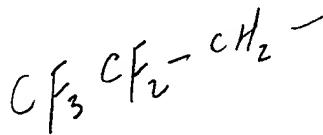
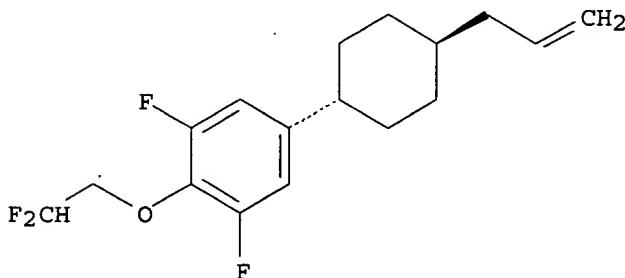
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 163425-17-0P 163425-18-1P 163425-19-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. and use in liq. crystal compns. for display devices)

IT 163425-13-6P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. and use in liq. crystal compns. for display devices)

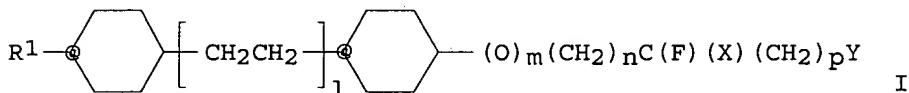
RN 163425-13-6 CAPLUS
 CN Benzene, 2-(2,2-difluoroethoxy)-1,3-difluoro-5-[4-(2-propenyl)cyclohexyl]-, trans- (9CI) (CA INDEX NAME)

Relative stereochemistry.



AN 1995:994156 CAPLUS
 DN 124:41491
 TI Liquid crystal compound and liquid crystal composition containing the same
 IN Miyazawa, Kazutoshi; Matsui, Shuichi; Fujita, Atsuko; Kondo, Tomoyuki;
 Goto, Yasuyuki; Nakagawa, Etsuo; Sawada, Shinichi
 PA Chisso Corp., Japan
 SO PCT Int. Appl., 87 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 IC ICM C09K019-30
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9520021	A1	19950727	WO 1994-JP1914	19941111
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	RW: KE, MW, SD, SZ, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	JP 11035500	A2	19990209	JP 1994-129304	19940610
	AU 9481163	A1	19950808	AU 1994-81163	19941111
	EP 742275	A1	19961113	EP 1995-900293	19941111
	EP 742275	B1	20020320		
	R: DE, GB				
	US 5779936	A	19980714	US 1996-682678	19960724
PRAI	JP 1994-6629	A	19940125		
	JP 1994-129304	A	19940610		
	WO 1994-JP1914	W	19941111		
OS	MARPAT	124:41491			
GI					



AB A novel liq. crystal compd. represented by general formula I where R1 represents C1-C12 alkyl wherein one CH₂ group may be replaced by oxygen or -CH=CH-; X represents hydrogen or fluorine; Y represents hydrogen or C1-C5 alkoxy; l and m represent each independently 0 or 1; and n and p represent each independently an integer of 0 to 10; provided n is at least 1 when p is 0, and X represents fluorine and p represents 0 when Y represents alkoxy and a liq. crystal compn. contg. the same and having a high clearing point and a viscosity redn. effect suitable for use as a liq. crystal display element are claimed.
 ST liq crystal fluoroalkyloxycyclohexylalkylcyclohexane electrooptical display
 IT Liquid crystals
 (fluoroalkyloxycyclohexylalkylcyclohexane derivs. as)
 IT Optical imaging devices
 (electrooptical liq.-crystal, contg. fluoroalkyloxycyclohexylalkylcyclohexane derivs.)
 IT 171517-63-8P 171517-65-0P 171517-66-1P 171517-67-2P 171517-68-3P
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171719-81-6P	171719-82-7P	171719-83-8P	171719-84-9P	171719-85-0P
171719-86-1P	171719-87-2P	171719-88-3P	171719-89-4P	171719-90-7P
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RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepн. and use as liq. crystal for electrooptical display devices)

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171720-92-6P 171720-93-7P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. and use as liq. crystal for electrooptical display devices)

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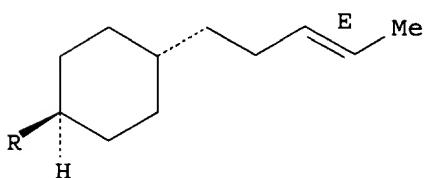
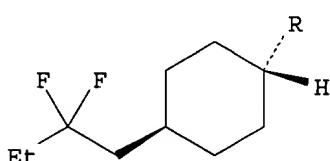
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. and use as liq. crystal for electrooptical display devices)

RN 171717-97-8 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(2,2-difluorobutyl)-4'-(3-pentenyl)-,
[1'.alpha.(trans),4'.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

Double bond geometry as shown.

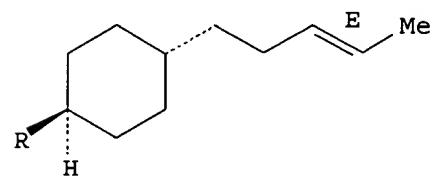
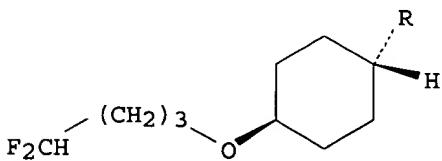


RN 171719-22-5 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(4,4-difluorobutoxy)-4'-(3-pentenyl)-, stereoisomer
(9CI) (CA INDEX NAME)

Relative stereochemistry.

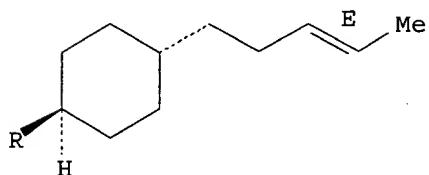
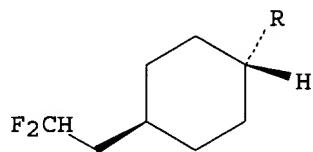
Double bond geometry as shown.



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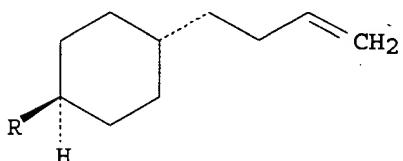
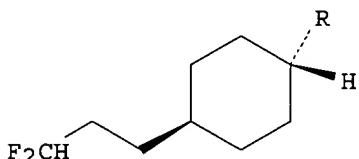
CN 1,1'-Bicyclohexyl, 4-(2,2-difluoroethyl)-4'-(3-pentenyl)-,
[1'.alpha.(trans),4'.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry as shown.



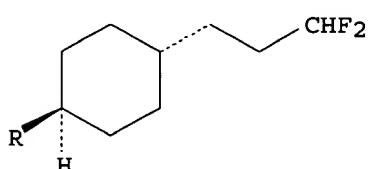
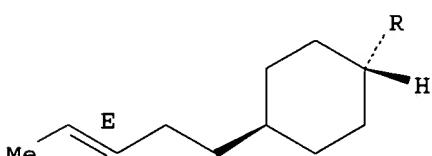
RN 171720-52-8 CAPLUS
CN 1,1'-Bicyclohexyl, 4-(3-butenyl)-4'-(3,3-difluoropropyl)-, [trans(trans)]-
(9CI) (CA INDEX NAME)

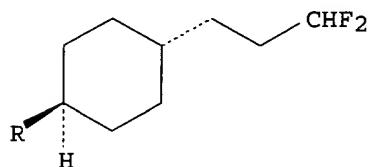
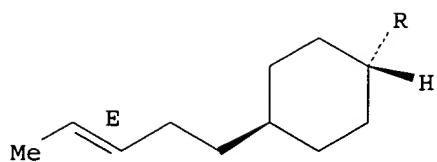
Relative stereochemistry.



RN 171720-53-9 CAPLUS
CN 1,1'-Bicyclohexyl, 4-(3,3-difluoropropyl)-4'-(3-pentenyl)-,
[1'.alpha.(trans),4'.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.
Double bond geometry as shown.



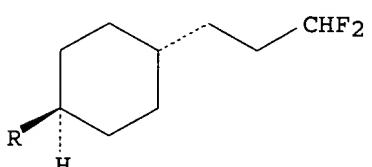
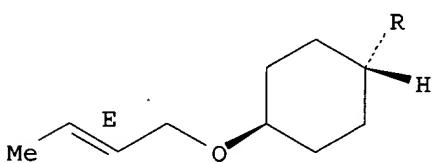


RN 171720-54-0 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(2-butenyloxy)-4'-(3,3-difluoropropyl)-, [1.alpha.(trans),4.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

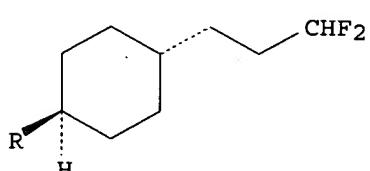
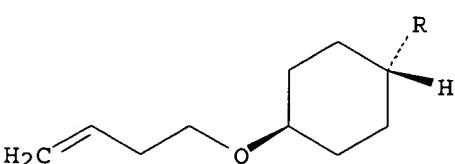
Double bond geometry as shown.



RN 171720-55-1 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(3-butenyloxy)-4'-(3,3-difluoropropyl)-, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

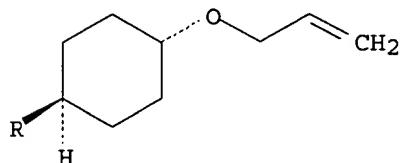
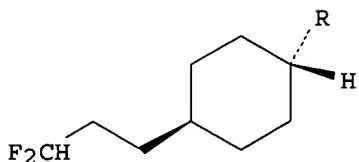


RN 171720-58-4 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(3,3-difluoropropyl)-4'-(2-propenyl)-,

[trans(trans)]- (9CI) (CA INDEX NAME)

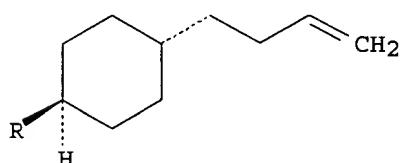
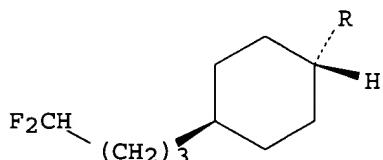
Relative stereochemistry.



RN 171720-60-8 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(3-butenyl)-4'-(4,4-difluorobutyl)-, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

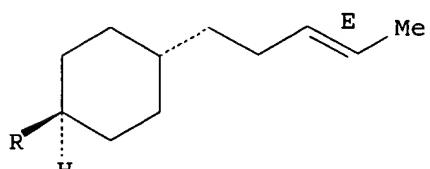
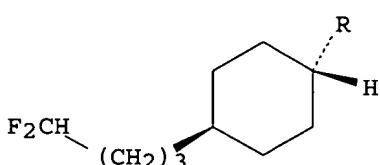


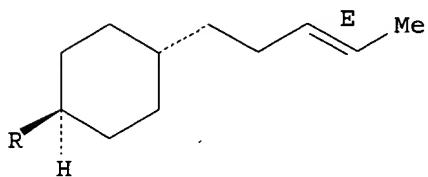
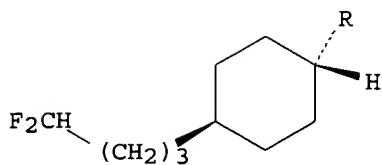
RN 171720-61-9 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(4,4-difluorobutyl)-4'-(3-pentenyl)-, [1'.alpha.(trans),4'.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

Double bond geometry as shown.



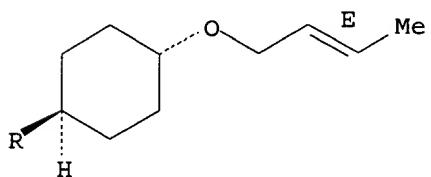
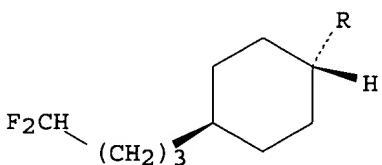


RN 171720-62-0 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(2-butenyloxy)-4'-(4,4-difluorobutyl)-, [1. α .(trans),4. β .(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

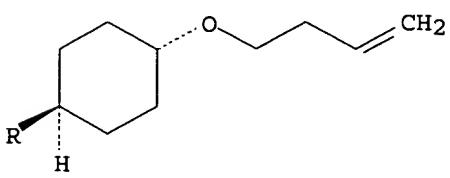
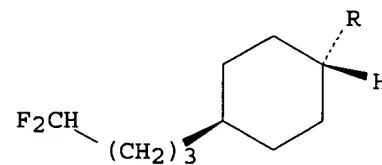
Double bond geometry as shown.



RN 171720-63-1 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(3-butenoxy)-4'-(4,4-difluorobutyl)-, [trans(trans)]- (9CI) (CA INDEX NAME)

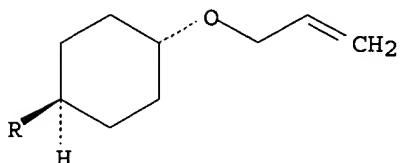
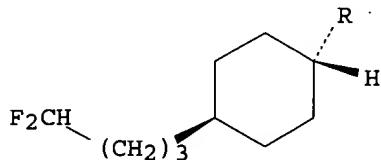
Relative stereochemistry.



RN 171720-66-4 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(4,4-difluorobutyl)-4'-(2-propenyoxy)-, [trans(trans)]- (9CI) (CA INDEX NAME)

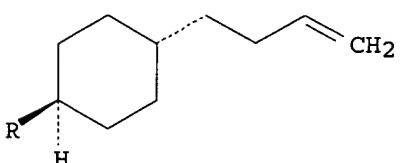
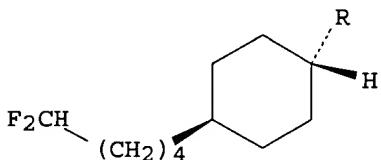
Relative stereochemistry.



RN 171720-67-5 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(3-butenyl)-4'-(5,5-difluoropentyl)-, [trans(trans)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

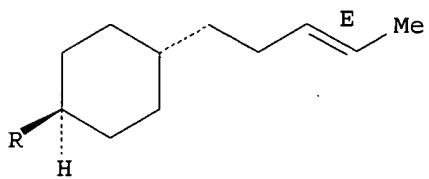
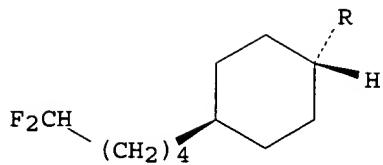


RN 171720-68-6 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(5,5-difluoropentyl)-4'-(3-pentenyl)-, [1'.alpha.(trans),4'.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

Double bond geometry as shown.

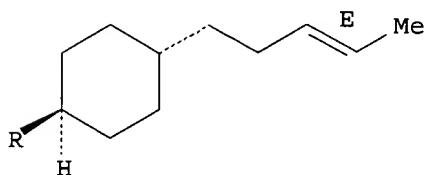
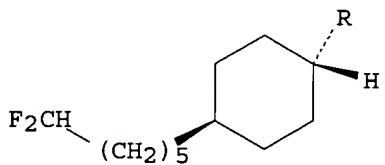


RN 171720-70-0 CAPLUS

CN 1,1'-Bicyclohexyl, 4-(6,6-difluorohexyl)-4'-(3-pentenyl)-,
[1'.alpha.(trans),4'.beta.(E)]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

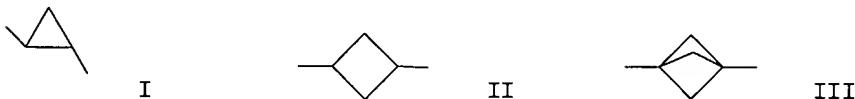
Double bond geometry as shown.



AN 1998:157607 CAPLUS
 DN 128:277194
 TI Liquid-crystalline compound, liquid crystal composition, and liquid crystal display device
 IN Miyasawa, Kazutoshi; Takeuchi, Hiroyuki; Matsui, Akiichi; Hachitani, Norihisa; Takeshita, Fusayuki; Nakagawa, Etsuo
 PA Chisso Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 54 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07C022-08
 ICS C07C022-04; C07C043-192; C07C043-225; C07C069-75; C07C069-773;
 C07D239-26; C07D319-06; C09K019-30; C09K019-34; G02F001-13
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
 Section cross-reference(s): 25, 75
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10067694	A2	19980310	JP 1996-242697	19960826

OS MARPAT 128:277194
 GI



AB The compd. is represented as R1QR2(Q1Z1)p(Q2Z2)qQ3ZQ4(CH2)mCH:CFX [R1 = H, F, Cl, C1-18 alkyl whose methylene may by substituted with O, S, CH:CH, or C.tpbond.C and H may be substituted with halo, cyano; R2 = covalent bond, C1-8 .alpha.-.omega. alkylene whose methylene and H may be substituted as described; Q = CX1H, CX1X2, CYH, I, II, III; X1, X2 = F, Cl; Y = C1-5 alkyl, Q1-Q3 = (halogen-substituted) 1,4-cyclohexylene, 1,4-cyclohexenylene, 1,4-phenylene, 1,3-dioxane-2,5-diyl, pyridine-2,5-diyl, pyrimidine-2,5-diyl; Z1-Z3 = covalent bond, CH2CH2, CH:CH, C.tpbond.C, CH2O, OCH2, (CH2)4, (CH2)3O, O(CH2)3, (CH2)2CH:CH, CH:CH(CH2)2, CF2O, OCF2, CMeCH:CH, CH:CMe, CF:CF; X = H, F; p, q = 0, 1; m = 0-5; Q4 = trans-1,4-cyclohexylene; each element may be substituted with its isotope]. The compd. shows sharp threshold characteristics, low viscosity, and good compatibility to other liq.-cryst. components. Liq. crystal compn. contg. the compd. and other components (specific Markush structures are shown in the claim) and liq. crystal display device using the compn. are also claimed.
 ST liq cryst compd sharp threshold characteristics; low viscosity liq cryst compd; compatibility liq crystal compn; display liq crystal
 IT Liquid crystals
 (liq.-cryst. compd. having sharp threshold characteristics and low viscosity for liq. crystal compn. showing improved compatibility)
 IT Liquid crystal displays
 (liq.-cryst. compd. having sharp threshold characteristics and low viscosity for liq. crystal compn. showing improved compatibility for)
 IT 205510-05-0P 205510-06-1P 205510-08-3P 205510-09-4P 205510-10-7P
 205510-11-8P
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
 (liq.-cryst. compd. having sharp threshold characteristics and low viscosity for liq. crystal compn. from)
 IT 1895-39-2, Sodium chlorodifluoroacetate 38078-09-0, DAST 38674-58-7
 56309-94-5 69891-92-5 205510-07-2

RL: RCT (Reactant); RACT (Reactant or reagent)
 (liq.-cryst. compd. having sharp threshold characteristics and low
 viscosity for liq. crystal compn. from)

IT 205507-53-5P 205507-54-6P
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (liq.-cryst. compd. having sharp threshold characteristics and low
 viscosity for liq. crystal compn. showing improved compatibility)

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	57202-28-5	57202-29-6	57202-30-9	58743-75-2	59855-05-9	
	61203-99-4	61204-01-1	61204-03-3	64835-59-2	67589-39-3	
	67589-41-7	67589-47-3	67589-52-0	67589-53-1	67589-72-4	
	68065-81-6	70567-18-9	70602-95-8	72928-54-2	74240-64-5	
	74240-65-6	76802-59-0	76802-61-4	79319-27-0	79912-85-9	
	79945-42-9	80944-44-1	80955-71-1	81701-13-5	81711-13-9	
	81793-57-9	81793-59-1	82406-82-4	82406-83-5	82492-42-0	
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RL: TEM (Technical or engineered material use); USES (Uses)
 (liq.-cryst. compd. having sharp threshold characteristics and low
 viscosity for liq. crystal compn. showing improved compatibility)

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205510-01-6	205510-02-7	205510-03-8	205510-04-9	205510-12-9
205510-13-0				

RL: TEM (Technical or engineered material use); USES (Uses)
 (liq.-cryst. compd. having sharp threshold characteristics and low
 viscosity for liq. crystal compn. showing improved compatibility)

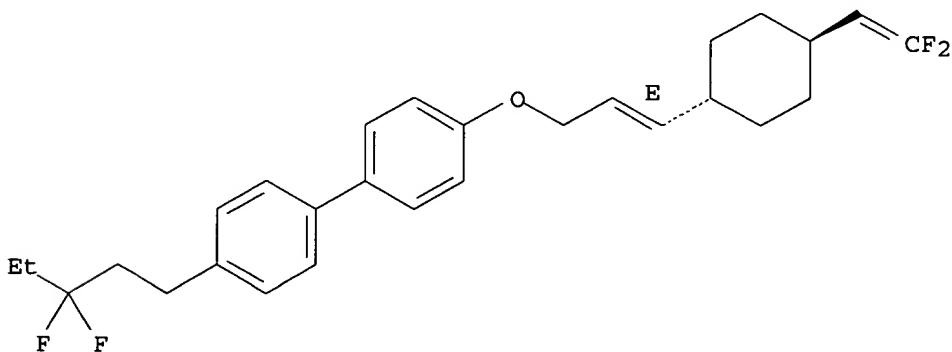
IT **205508-90-3**

RL: TEM (Technical or engineered material use); USES (Uses)
 (liq.-cryst. compd. having sharp threshold characteristics and low
 viscosity for liq. crystal compn. showing improved compatibility)

RN 205508-90-3 CAPLUS

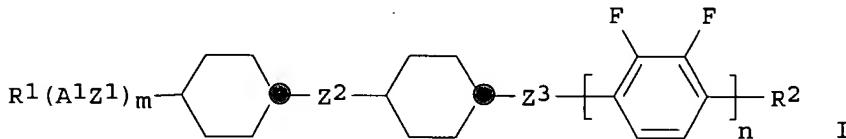
CN 1,1'-Biphenyl, 4-[[3-[4-(2,2-difluoroethyl) cyclohexyl]-2-propenyl]oxy]-
 4'-(3,3-difluoropentyl)-, [1.alpha.(E),4.beta.]- (9CI) (CA INDEX NAME)

Relative stereochemistry.
 Double bond geometry as shown.



AN 1999:640805 CAPLUS
 DN 131:279369
 TI Vinylene and ethyl compounds
 IN Bremer, Matthias; Pauluth, Detlef; Tarumi, Kazuaki; Krause, Joachim;
 Heckmeier, Michael
 PA Merck Patent G.m.b.H., Germany
 SO PCT Int. Appl., 100 pp.
 CODEN: PIXXD2
 DT Patent
 LA German
 IC ICM C07C025-18
 ICS C09K019-30; C07C043-225; C07C025-24
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other
 Reprographic Processes)
 Section cross-reference(s): 75
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9950210	A1	19991007	WO 1999-EP2136	19990329
	W: DE, JP, US				
	DE 19814550	A1	19991007	DE 1998-19814550	19980401
	JP 2002509900	T2	20020402	JP 2000-541121	19990329
	US 6468608	B1	20021022	US 2000-646923	20000925
PRAI	DE 1998-19814550	A	19980401		
	WO 1999-EP2136	W	19990329		
OS	MARPAT	131:279369			
GI					



AB The invention relates to vinylene and Et compds. of formula I (R1, R2 = C1-15-alkyl, alkenyl; A1 = trans-1,4-cyclohexylene, 1,4-phenylene, 1,4-cyclohexenylene, 1,4-bicyclo(2,2,2)-octylene, piperidine-1,4-diyl, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl; Z1, Z2, Z3 = -COO-, -OCO-, -CH2O-, -OCH2-, -CH2CH2-, -CH:CH-, -CF2O-, -OCF2-, -(CH2)4-, single bond, -CL1:CL2-, -CL3L4-CL5L6-; L1-L6 = H, F; m = 0, 1; n = 1, 2). The inventive compds. are suitable as components of liq. cryst. media.
 ST vinylene ethyl compd liq crystal display
 IT Liquid crystals
 (nematic; vinylene and Et compds. for liq. crystal media)
 IT Liquid crystal displays
 (vinylene and Et compds. for liq. crystal media)
 IT 85600-56-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (ein liq. crystal mixt. for ECB mode liq. crystal display)
 IT 76802-59-0 76802-61-4 80944-44-1 80955-71-1 81711-13-9
 81936-32-5 85312-59-0 92263-41-7 96624-52-1 97398-80-6
 98321-58-5 102714-95-4 118164-51-5 121219-85-0 123560-48-5
 124728-81-0 124729-02-8 133914-49-5 133914-50-8 133937-72-1
 135734-59-7 135734-60-0 174350-05-1 174350-06-2 174350-08-4
 245537-88-6
 RL: TEM (Technical or engineered material use); USES (Uses)
 (in liq. crystal mixt. for ECB mode liq. crystal display)
 IT 4009-98-7, Methoxymethyltriphenylphosphoniumchloride 4746-97-8,
 1,4-Dioxaspiro[4.5]decan-8-one 7529-22-8, N-Methylmorpholine-N-oxide
 7783-60-0, Sulfur tetrafluoride 51010-74-3, Morpholinosulfur trifluoride

121219-07-6, 2,3-Difluorø-1-ethoxybenzene 135807-96-4 143456-90-0
245535-16-4 245535-17-5 245536-50-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(prepns. of vinylene and Et compds. for liq. crystal media)

IT 220437-00-3P 220437-02-5P 245530-35-2P 245530-36-3P 245530-37-4P
245530-38-5P 245535-18-6P 245535-21-1P 245535-22-2P 245536-51-0P
245536-52-1P 245536-53-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepns. of vinylene and Et compds. for liq. crystal media)

IT 106-98-9P, 1-Butene, preparation 245530-39-6P 245530-40-9P
245530-41-0P 245530-42-1P 245530-43-2P 245530-44-3P 245530-45-4P
245530-46-5P 245530-47-6P 245530-48-7P 245530-49-8P 245530-50-1P
245530-51-2P 245530-52-3P 245530-53-4P 245530-54-5P 245530-55-6P
245530-57-8P 245530-58-9P 245530-59-0P 245530-60-3P 245530-61-4P
245530-62-5P 245530-63-6P 245530-64-7P 245530-66-9P 245530-67-0P
245530-68-1P 245530-69-2P 245530-70-5P 245530-71-6P 245530-72-7P
245530-73-8P 245530-75-0P 245530-76-1P 245530-78-3P 245530-79-4P
245530-80-7P 245530-81-8P 245530-83-0P 245530-84-1P 245530-85-2P
245530-86-3P 245530-87-4P 245530-88-5P 245530-89-6P 245530-90-9P
245530-91-0P 245530-92-1P 245530-93-2P 245530-95-4P 245530-96-5P
245530-97-6P 245530-98-7P 245530-99-8P 245531-00-4P 245531-01-5P
245531-02-6P 245531-03-7P 245531-04-8P 245531-05-9P 245531-06-0P
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245531-14-0P 245531-15-1P 245531-16-2P 245531-17-3P 245531-18-4P
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245531-72-0P 245531-74-2P 245531-75-3P 245531-77-5P 245531-78-6P
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245531-85-5P 245531-86-6P 245531-87-7P 245531-88-8P 245531-89-9P
245531-91-3P 245531-92-4P 245531-93-5P 245531-94-6P 245531-95-7P
245531-97-9P 245531-98-0P 245531-99-1P 245532-01-8P 245532-02-9P
245532-03-0P 245532-04-1P 245532-05-2P 245532-06-3P 245532-07-4P
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245532-45-0P 245532-46-1P 245532-48-3P 245532-49-4P 245532-50-7P
245532-51-8P 245532-53-0P 245532-54-1P 245532-55-2P 245532-56-3P
245532-58-5P 245532-59-6P 245532-60-9P 245532-61-0P 245532-62-1P
245532-63-2P 245532-64-3P 245532-65-4P 245532-66-5P 245532-68-7P
245532-69-8P 245532-70-1P 245532-72-3P 245532-73-4P 245532-74-5P
245532-75-6P 245532-76-7P 245532-77-8P 245532-79-0P 245532-80-3P
245532-81-4P 245532-82-5P 245532-83-6P 245532-84-7P 245532-87-0P
245532-88-1P 245532-89-2P 245532-90-5P 245532-93-8P 245532-94-9P
245532-95-0P 245532-96-1P 245532-97-2P 245532-98-3P 245532-99-4P
245533-00-0P 245533-01-1P 245533-03-3P 245533-05-5P 245533-06-6P
245533-07-7P 245533-08-8P 245533-10-2P 245533-11-3P 245533-12-4P
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245533-20-4P

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepns. of vinylene and Et compds. for liq. crystal media)

IT 245533-21-5P 245533-22-6P 245533-23-7P 245533-24-8P 245533-25-9P
245533-27-1P 245533-28-2P 245533-29-3P 245533-30-6P 245533-31-7P
245533-32-8P 245533-34-0P 245533-35-1P 245533-36-2P 245533-37-3P

245533-39-5P	245533-40-8P	245533-41-9P	245533-42-0P	245533-44-2P
245533-45-3P	245533-46-4P	245533-47-5P	245533-49-7P	245533-50-0P
245533-51-1P	245533-53-3P	245533-54-4P	245533-55-5P	245533-59-9P
245533-60-2P	245533-62-4P	245533-65-7P	245533-67-9P	245533-68-0P
245533-69-1P	245533-70-4P	245533-72-6P	245533-73-7P	245533-74-8P
245533-75-9P	245533-77-1P	245533-78-2P	245533-79-3P	245533-80-6P
245533-81-7P	245533-82-8P	245533-83-9P	245533-84-0P	245533-86-2P
245533-89-5P	245533-90-8P	245533-91-9P	245533-92-0P	245533-93-1P
245533-94-2P	245533-95-3P	245533-96-4P	245533-98-6P	245533-99-7P
245534-00-3P	245534-01-4P	245534-02-5P	245534-03-6P	245534-04-7P
245534-06-9P	245534-07-0P	245534-09-2P	245534-10-5P	245534-11-6P
245534-12-7P	245534-13-8P	245534-14-9P	245534-15-0P	245534-17-2P
245534-18-3P	245534-19-4P	245534-20-7P	245534-23-0P	245534-24-1P
245534-25-2P	245534-26-3P	245534-28-5P	245534-29-6P	245534-30-9P
245534-31-0P	245534-32-1P	245534-33-2P	245534-34-3P	245534-35-4P
245534-36-5P	245534-37-6P	245534-40-1P	245534-41-2P	245534-42-3P
245534-43-4P	245534-44-5P	245534-45-6P	245534-46-7P	245534-47-8P
245534-48-9P	245534-50-3P	245534-51-4P	245534-53-6P	245534-54-7P
245534-55-8P	245534-57-0P	245534-58-1P	245534-59-2P	245534-60-5P
245534-61-6P	245534-62-7P	245534-63-8P	245534-65-0P	245534-66-1P
245534-67-2P	245534-68-3P	245534-69-4P	245534-70-7P	245534-71-8P
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245535-11-9P	245535-12-0P	245535-13-1P	245535-14-2P	
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245535-62-0P	245535-63-1P	245535-64-2P	245535-65-3P	245535-67-5P
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245536-10-1P	245536-11-2P	245536-12-3P	245536-13-4P	245536-14-5P
245536-15-6P	245536-16-7P	245536-17-8P	245536-18-9P	

RL: SPN (Synthetic preparation); PREP (Preparation)
(prepns. of vinylene and Et compds. for liq. crystal media)

IT	245536-19-0P	245536-20-3P	245536-21-4P	245536-22-5P	245536-24-7P
	245536-25-8P	245536-26-9P	245536-28-1P	245536-29-2P	245536-30-5P
	245536-31-6P	245536-32-7P	245536-33-8P	245536-34-9P	245536-36-1P
	245536-37-2P	245536-38-3P	245536-39-4P	245536-40-7P	245536-41-8P
	245536-42-9P	245536-43-0P	245536-45-2P	245536-46-3P	245536-47-4P
	245536-49-6P	245536-55-4P	245536-56-5P	245536-57-6P	245536-58-7P
	245536-59-8P	245536-60-1P	245536-61-2P	245536-62-3P	245536-63-4P
	245536-65-6P	245536-66-7P	245536-68-9P	245536-69-0P	245536-70-3P
	245536-71-4P	245536-72-5P	245536-73-6P	245536-75-8P	245536-76-9P
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	245536-82-7P	245536-85-0P	245536-86-1P	245536-87-2P	245536-88-3P
	245536-89-4P	245536-90-7P	245536-91-8P	245536-92-9P	245536-93-0P
	245536-94-1P	245536-95-2P	245536-97-4P	245536-98-5P	245536-99-6P
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245537-39-7P	245537-40-0P	245537-41-1P	245537-42-2P	245537-44-4P
245537-45-5P	245537-46-6P	245537-47-7P	245537-48-8P	245537-49-9P
245537-50-2P	245537-51-3P	245537-52-4P	245537-53-5P	245537-54-6P
245537-55-7P	245537-56-8P	245537-57-9P	245537-58-0P	245537-59-1P
245537-60-4P	245537-62-6P	245537-63-7P	245537-64-8P	245537-65-9P
245537-66-0P	245537-67-1P	245537-68-2P	245537-69-3P	245537-71-7P
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245537-77-3P	245537-78-4P	245537-80-8P	245537-81-9P	245537-82-0P
245537-83-1P	245537-84-2P	245537-85-3P		

RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of vinylene and Et compds. for liq. crystal media)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Asahi Glass Co Ltd; EP 0560382 A 1993 CAPLUS
- (2) Asahi Glass Co Ltd Japan; JP 05070382 A CAPLUS
- (3) Asahi Glass Co Ltd Japan; JP 05085972 A CAPLUS
- (4) Asahi Glass Co Ltd Japan; JP 05279278 A CAPLUS
- (5) Kumai, S; 1994, 16, CAPLUS
- (6) Merck Patent Gmbh; DE 4205970 A 1993 CAPLUS
- (7) Merck Patent Gmbh; DE 19707154 A 1997 CAPLUS
- (8) Shintani, S; 1993, 14, CAPLUS
- (9) Shintani, S; 1993, 26, CAPLUS

IT 245534-87-6P 245534-90-1P 245535-01-7P
245535-03-9P 245535-14-2P 245535-15-3P

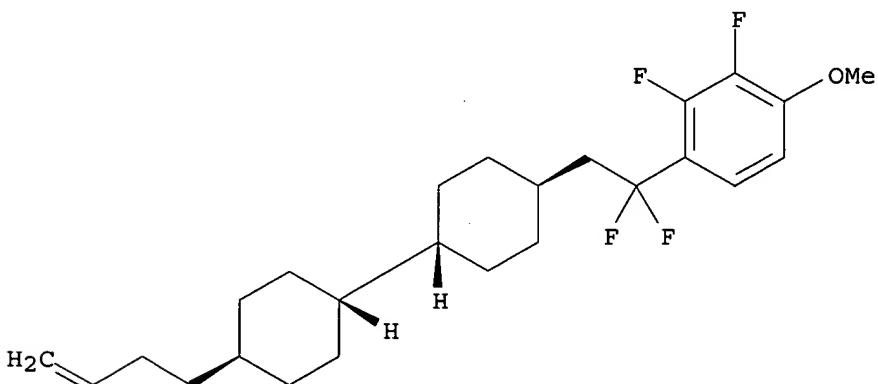
RL: SPN (Synthetic preparation); PREP (Preparation)

(prepn. of vinylene and Et compds. for liq. crystal media)

RN 245534-87-6 CAPLUS

CN Benzene, 1-[2-[(trans,trans)-4'-(3-butenyl)[1,1'-bicyclohexyl]-4-yl]-1,1-difluoroethyl]-2,3-difluoro-4-methoxy- (9CI) (CA INDEX NAME)

Relative stereochemistry.

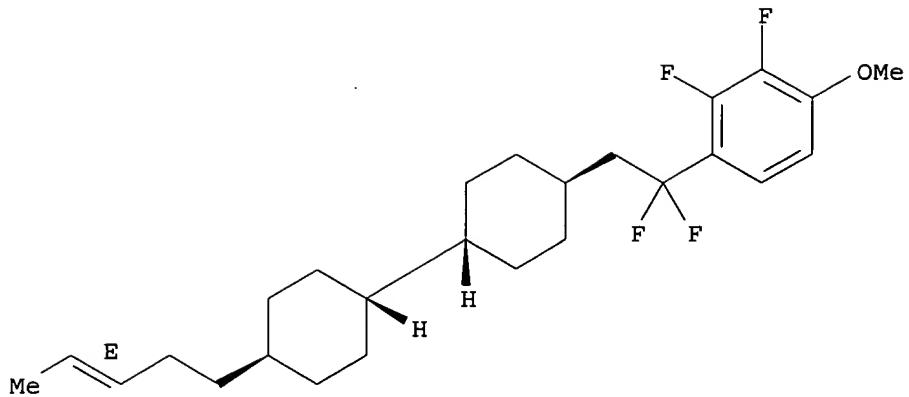


RN 245534-90-1 CAPLUS

CN Benzene, 1-[1,1-difluoro-2-[(trans,trans)-4'-(3E)-3-pentenyl[1,1'-bicyclohexyl]-4-yl]ethyl]-2,3-difluoro-4-methoxy- (9CI) (CA INDEX NAME)

Relative stereochemistry.

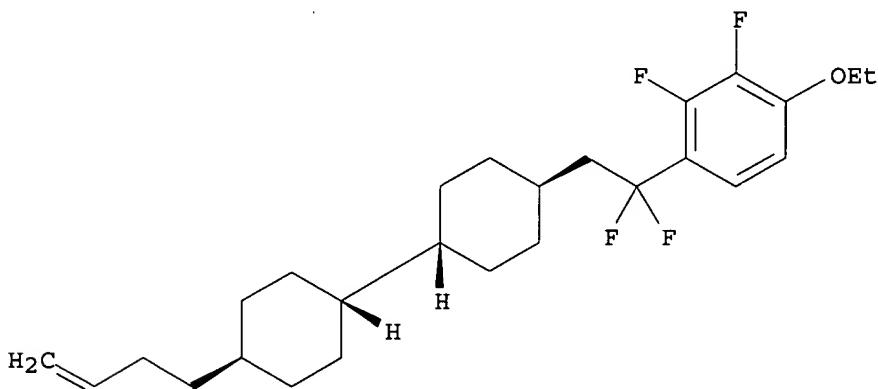
Double bond geometry as shown.



RN 245535-01-7 CAPLUS

CN Benzene, 1-[2-[(trans,trans)-4'-(3-butenyl)[1,1'-bicyclohexyl]-4-yl]-1,1-difluoroethyl]-4-ethoxy-2,3-difluoro- (9CI) (CA INDEX NAME)

Relative stereochemistry.

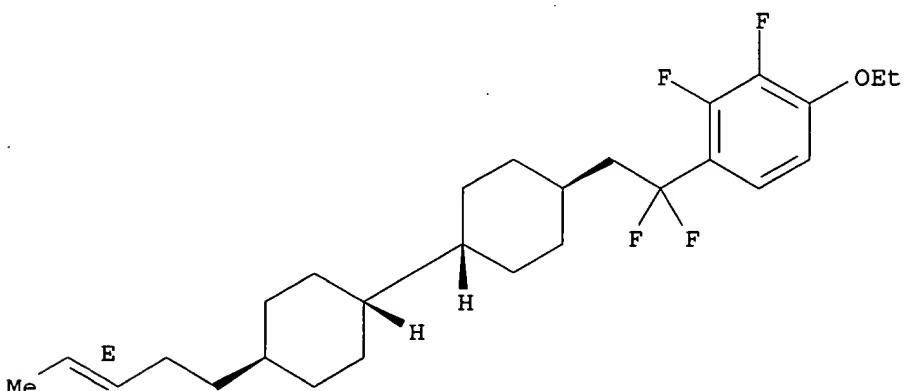


RN 245535-03-9 CAPLUS

CN Benzene, 1-[1,1-difluoro-2-[(trans,trans)-4'-(3E)-3-pentenyl[1,1'-bicyclohexyl]-4-yl]ethyl]-4-ethoxy-2,3-difluoro- (9CI) (CA INDEX NAME)

Relative stereochemistry.

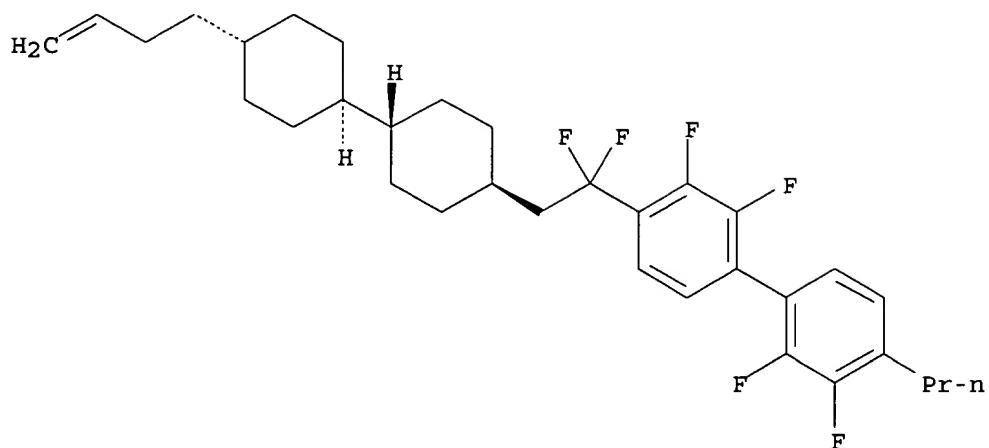
Double bond geometry as shown.



RN 245535-14-2 CAPLUS

CN 1,1'-Biphenyl, 4-[2-[(trans,trans)-4'-(3-butenyl)[1,1'-bicyclohexyl]-4-yl]-1,1-difluoroethyl]-2,2',3,3'-tetrafluoro-4'-propyl- (9CI) (CA INDEX NAME)

Relative stereochemistry.

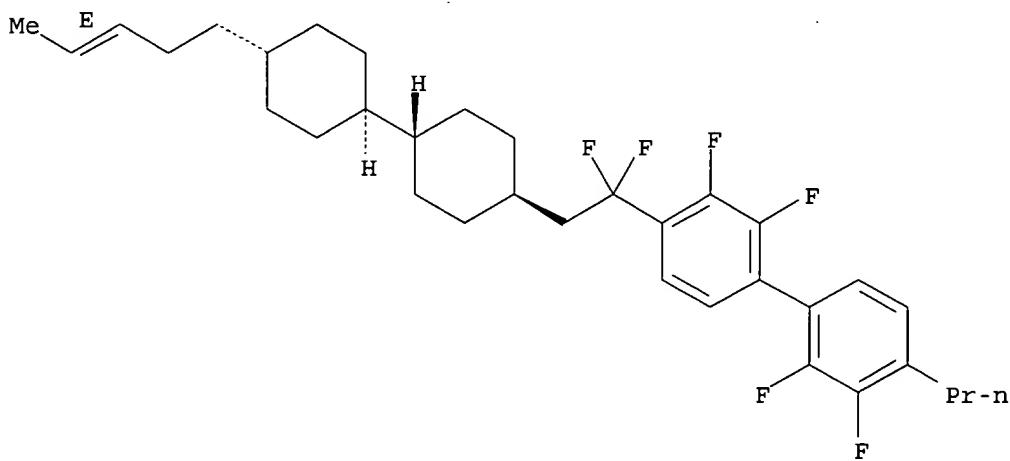


RN 245535-15-3 CAPLUS

CN 1,1'-Biphenyl, 4-[1,1-difluoro-2-[(*trans,trans*)-4'-(3*E*)-3-pentenyl]bicyclohexyl]-4'-yl]ethyl]-2,2',3,3'-tetrafluoro-4'-propyl- (9CI) (CA INDEX NAME)

Relative stereochemistry.

Double bond geometry as shown.



AN 2002:716753 CAPLUS
DN 137:255487
TI Alkyl silane liquid crystal compounds
IN Wand, Michael; Gough, Neil; More, Kundalika; Thurmes, William N.; Chen, Xin-Hua
PA USA
SO U.S. Pat. Appl. Publ., 51 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C09K019-34
ICS C09K019-20; C07F007-02; C07F007-21
NCL 252299610
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2002130299	A1	20020919	US 2001-754033	20010103
PRAI	US 2000-256063P	P	20001215		

AB The present invention relates to compds. useful as components of LC and FLC compns. which in turn are useful in the manuf. of optical devices. Compds. of this invention have a silane tail, which can contain more than one Si. Compds. of this invention can include those with disilane tails. The invention provides LC compns. contg. one or more of the silanes of this invention. Addn. of one or more of the compds. of this invention to LC compns. can result in significant improvement in optical or LC properties. In particular, the compds. of this invention can significantly lower the m.p., f.p. or both of an LC compn. resulting in significant improvement in device stability.

ST liq crystal optical device display

IT Liquid crystal displays

(alkyl silane liq. crystal compds. for)

IT Liquid crystals

(ferroelec.; prepn. of alkyl silane liq. crystal compds. for liq crystal display)

IT Ferroelectric materials

(liq.-crystal; prepn. of alkyl silane liq. crystal compds. for liq crystal display)

IT Liquid crystals

(nematic; prepn. of alkyl silane liq. crystal compds. for liq crystal display)

IT Liquid crystals

(smectic A; alkyl silane liq. crystal compds.)

IT Liquid crystals

(smectic C; prepn. of alkyl silane liq. crystal compds. for liq crystal display)

IT 402860-34-8P 460359-01-7P 460359-02-8P 460359-03-9P 460359-04-0P
460359-05-1P 460359-06-2P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(alkyl silane liq. crystal compds. for liq crystal display)

IT 57202-41-2 57202-54-7 57202-58-1 121083-93-0 121218-85-7

121218-90-4 126163-69-7 155468-60-3 155468-61-4 308107-81-5

460359-38-0 460359-40-4 460359-41-5 460359-42-6 460359-44-8

460359-45-9 460359-46-0 460359-52-8 460359-53-9 460359-56-2

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(alkyl silane liq. crystal compds. for liq crystal display)

IT 460359-18-6P 460359-20-0P 460359-21-1P 460359-22-2P 460359-24-4P

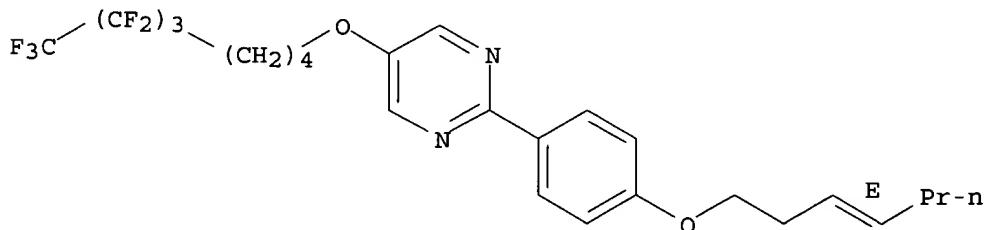
460359-26-6P 460359-28-8P 460359-31-3P 460359-32-4P 460359-33-5P

460359-34-6P 460359-35-7P 460359-36-8P 460359-37-9P 460359-96-0P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material

use); PREP (Preparation); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 IT 57202-48-9 120091-49-8 460359-39-1 **460359-43-7** 460359-47-1
 460359-54-0 460359-55-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 IT 1066-35-9, Chlorodimethylsilane 1066-54-2, (Trimethylsilyl)acetylene
 2344-80-1, Chloromethyltrimethylsilane 2695-48-9, 8-Bromo-1-octene
 13170-43-9, (Trimethylsilyl)methylmagnesium chloride 17196-12-2
 30102-73-9 58415-63-7, 4-(5-Octylpyrimidin-2-yl)-phenol 68535-55-7,
 2-(4-Hydroxyphenyl)pyrimidine 110203-06-0, 4-(5-Decyloxy-pyrimidin-2-yl)-
 phenol 124410-14-6 149396-77-0, 6-(4-Octyl-phenyl)-pyridin-3-ol
 179817-73-3 460359-00-6 460359-19-7 460359-23-3 460359-25-5
 460359-27-7 460359-29-9 460359-30-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prep. of alkyl silane liq. crystal compds. for liq crystal display)
 IT 1189-75-9P 28681-61-0P 460359-07-3P 460359-08-4P 460359-09-5P
 460359-10-8P 460359-11-9P 460359-12-0P 460359-13-1P 460359-14-2P
 460359-15-3P 460359-16-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
 (Reactant or reagent)
 (prep. of alkyl silane liq. crystal compds. for liq crystal display)
 IT 460359-17-5P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (prep. of alkyl silane liq. crystal compds. for liq crystal display)
 IT **460359-43-7**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 RN 460359-43-7 CAPLUS
 CN Pyrimidine, 2-[4-[(3E)-3-heptenyl]phenyl]-5-[(5,5,6,6,7,7,8,8,8-
 nonafluoroctyl)oxy]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



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Term	Documents
MDX.DWPI,TDBD,EPAB,JPAB,USPT.	619
MDXES	0
195?	0
195A.DWPI,TDBD,EPAB,JPAB,USPT.	869
195B.DWPI,TDBD,EPAB,JPAB,USPT.	529
195C.DWPI,TDBD,EPAB,JPAB,USPT.	191
195D.DWPI,TDBD,EPAB,JPAB,USPT.	150
195E.DWPI,TDBD,EPAB,JPAB,USPT.	61
195F.DWPI,TDBD,EPAB,JPAB,USPT.	39
195G.DWPI,TDBD,EPAB,JPAB,USPT.	82
195H.DWPI,TDBD,EPAB,JPAB,USPT.	39
(MDX 195?).USPT,JPAB,EPAB,DWPI,TDBD.	0

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Derwent World Patents Index
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Database:**Search:**

Search History

DATE: Thursday, October 24, 2002 [Printable Copy](#) [Create Case](#)

<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u>
side by side		result set	
<i>DB=USPT,JPAB,EPA,B,DWPI,TDBD; PLUR=YES; OP=ADJ</i>			
<u>L6</u>	mdx 195?	0	<u>L6</u>
<u>L5</u>	fluorinated alkyl same alkenyl same liquid crystal\$	3	<u>L5</u>
<u>L4</u>	florinated alkyl same alkenyl same liquid crystal\$	0	<u>L4</u>
<u>L3</u>	L1 and wand-\$in.	0	<u>L3</u>
<u>L2</u>	L1 and Gough-\$in.	1	<u>L2</u>
<u>L1</u>	159? and liquid crystal\$	963	<u>L1</u>

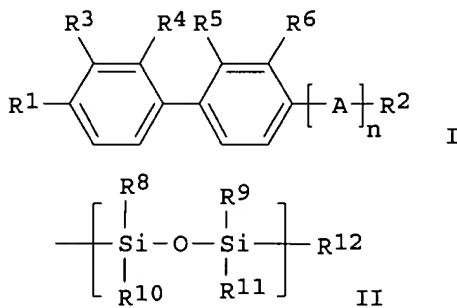
END OF SEARCH HISTORY

=> dis 1-3 all hitstr

L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2003 ACS
AN 2003:376798 CAPLUS
DN 138:393143
TI Liquid crystalline compounds containing biphenyl core for liquid crystal mixtures and devices
IN Goodby, John William; Toyne, Kenneth Johnson; Hird, Michael; Dong, Chu Chuan; Richards, Robert Dadd Campling
PA Qinetiq Limited, UK
SO PCT Int. Appl., 54 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C07C043-225
ICS C07F007-18; C07C069-63; C07C069-76; C07D319-04; C09K019-12; C09K019-40; C09K019-34
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 75
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003040074	A1	20030515	WO 2002-GB5045	20021107

W: JP, KR, US
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR
PRAI GB 2001-26844 A 20011108
OS MARPAT 138:393143
GI



AB Disclosed is a compd. of formula I or its dimer (R1, R2 = alkyl; alkenyl; alkynyl; group of sub-formula (i): -(O)m-(CH2)p-R7, where m = 0, 1; p = 1-12, R7 = -CqX2q+1, q = 1-12, X = fluoro; group of sub-formula II (k = 1-10; R8, R9 R10, R11, R12 = alkyl, alkenyl, aryl); provided that at least one of R1 or R2 is a group of sub-formula (i); R3, R4, R5, R6 = H, halogen; and in particular fluorine; n = 0-1; A is a ring structure as specified further in the claims). Compds. of the formula I have a stabilized Smectic A phase and thus may be particularly useful in liq. crystal mixts. to either induce or generate a smectic A phase, or to provide for a wider temp. range smectic A phase for purposes of alignment or electronic devices. Also some inventive compds. in have inherently low viscosities making them suitable for ferroelec. mixts.

ST liq cryst biphenyl core compd smectic A phase
IT Liquid crystals
(prepn. and properties of liq. cryst. compds. contg. biphenyl core)
IT Liquid crystal displays

(prep. and properties of liq. cryst. compds. contg. biphenyl core in relation to)

IT 3792-02-7P 83310-93-4P 124728-66-1P 402860-04-2P 402860-06-4P
 526212-99-7P 526213-01-4P 526213-04-7P 526213-05-8P 526213-07-0P
 526213-10-5P 526213-12-7P 526213-13-8P 526213-14-9P
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (prep. and properties of liq. cryst. compds. contg. biphenyl core)

IT 36096-97-6P 116486-78-3P 134052-01-0P 159142-57-1P 181042-39-7P,
 7,7,8,8,9,9,10,10,10-Nonafluorodecan-1-ol 219557-62-7P 485844-50-6P
 526213-03-6P 526213-06-9P 526213-08-1P 526213-09-2P 526213-15-0P
 526213-16-1P 526213-17-2P 526213-18-3P 526213-19-4P
526213-21-8P 526213-23-0P 526213-26-3P 526213-27-4P
 526213-28-5P 526213-29-6P 526213-30-9P 526213-31-0P 526213-32-1P
 526213-33-2P 526213-34-3P 526213-35-4P 526213-36-5P 526213-38-7P
 526213-40-1P 526213-41-2P 526213-42-3P 526213-43-4P 526213-45-6P
 526213-46-7P 526213-47-8P 526213-48-9P 526213-49-0P 526213-50-3P
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prep. and properties of liq. cryst. compds. contg. biphenyl core)

IT 106-41-2, 4-Bromophenol 423-39-2, Perfluorobutyl iodide 627-27-0,
 3-Buten-1-ol 927-74-2, 3-Butyn-1-ol 1000-05-1, 1,1,3,3,5,5,7,7-
 Octamethyltetrasiloxane 1438-82-0, Pentamethyldisiloxane 6418-38-8,
 2,3-Difluorophenol 29558-77-8 32653-34-2 51554-94-0 63619-66-9,
 4-Bromo-4'-octyloxybiphenyl 70648-12-3 96693-06-0 121219-16-7,
 2,3-Difluorophenylboronic acid 121219-22-5, 2,3-Difluoro-4-
 octyloxyphenyl boronic acid 121554-09-4, 4-Octyloxyphenylboronic acid
 126334-38-1, 2,3-Difluoro-4-nonylphenyl boronic acid 154024-87-0
 156684-82-1, 2-(4-Bromophenyl)-5-nonyl-1,3-dioxane 156685-56-2
 179817-66-4 179817-67-5 526213-11-6 526213-25-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (prep. and properties of liq. cryst. compds. contg. biphenyl core)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

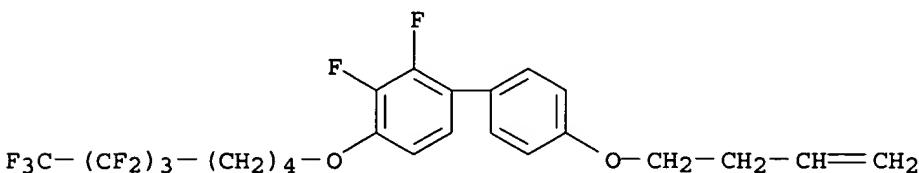
- (1) Dainippon Ink & Chem Inc; JP 11246451 A 1999 CAPLUS
- (2) de Givenchy; MOLECULAR CRYSTALS AND LIQUID CRYSTALS SCIENCE AND TECHNOLOGY, SECTION A: MOLECULAR CRYSTALS AND LIQUID CRYSTALS 1999, V332, P2519 CAPLUS
- (3) Hoechst Ag; DE 4427199 A 1996 CAPLUS
- (4) Kelly, S; MOLECULAR CRYSTALS AND LIQUID CRYSTALS SCIENCE AND TECHNOLOGY, SECTION A: MOLECULAR CRYSTALS AND LIQUID CRYSTALS 2001, V364, P873 CAPLUS
- (5) Merck Patent GmbH; WO 9001021 A 1990 CAPLUS
- (6) Merck Patent GmbH; WO 9213928 A 1992 CAPLUS
- (7) Merck Patent GmbH; DE 4215277 A 1993 CAPLUS
- (8) Merck Patent GmbH; DE 4222371 A 1994 CAPLUS
- (9) Merck Patent GmbH; WO 9605159 A 1996 CAPLUS
- (10) Minnesota Mining And Manufacturing Co; EP 0255236 A 1988 CAPLUS
- (11) Skelton, G; LIQUID CRYSTALS 2001, V28(5), P749 CAPLUS
- (12) The Secretary Of State For Defence; WO 0039062 A 2000 CAPLUS
- (13) Yusuke, K; POLYMER BULLETIN 1996, V36(6), P653

IT **526213-21-8P 526213-23-0P**

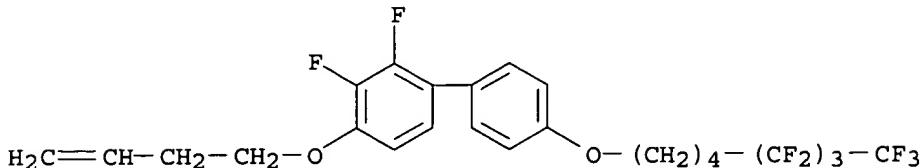
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
 (prep. and properties of liq. cryst. compds. contg. biphenyl core)

RN 526213-21-8 CAPLUS

CN 1,1'-Biphenyl, 4'-(3-butenyloxy)-2,3-difluoro-4-[(5,5,6,6,7,7,8,8,8-
 nonafluoroctyl)oxy]- (9CI) (CA INDEX NAME)



RN 526213-23-0 CAPLUS
CN 1,1'-Biphenyl, 4-(3-butenyloxy)-2,3-difluoro-4'-(5,5,6,6,7,7,8,8,8-nonafluorooctyl)oxy]-(9CI) (CA INDEX NAME)



L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2003 ACS
AN 2002:978521 CAPLUS
DN 138:64125
TI Liquid crystalline materials containing perfluoroalkyl and alkenyl tail groups
IN Gough, Neil; Vohra, Rohini; Wand, Michael; More, Kundalika; Thurmes, William N.
PA USA
SO U.S. Pat. Appl. Publ., 46 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C09K019-34
ICS C09K019-32; C09K019-30; C09K019-20; C09K019-12; C07D239-02
NCL 252299610; 544298000; 252299630; 252299620; 252299640; 252299660;
252299670; 544334000
CC 75-11 (Crystallography and Liquid Crystals)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI US 2002195585	A1	20021226	US 2001-754034	20010103
PRAI US 2000-255984P	P	20001215		

OS MARPAT 138:64125

AB This invention describes compds. that are useful as components in liq. crystal compns., particularly in ferroelec. liq. crystal compns. Compds. of the invention are rod-like mols. with a mesogenic (generally linear) core to which an alkene tail and an alkyl or alkoxy tail with a perfluoroalkyl terminal portion are bonded. Compds. of the invention can contain a variety of 1, 2 or 3 ring cores, wherein the rings maybe arom. or alicyclic. Alkenes of the invention are useful as components to improve LC properties of mixts., for example, to lower m.p. or to lower f.p., of LC compns.

ST ferroelec liq crystal perfluoroalkyl alkenyl tail group

IT Liquid crystals
(ferroelec.; liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)

IT Ferroelectric materials
(liq.-crystal; liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)

IT Liquid crystals
(nematic; liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)

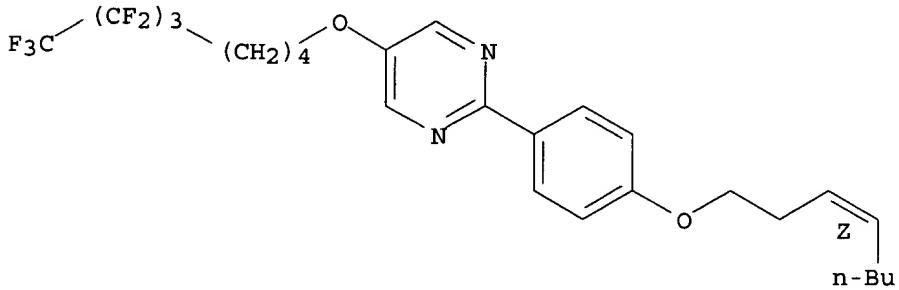
IT Liquid crystals
(smectic; liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)

IT 479201-26-8P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)

IT 57202-38-7 57202-39-8 57202-48-9 57202-54-7 57202-58-1

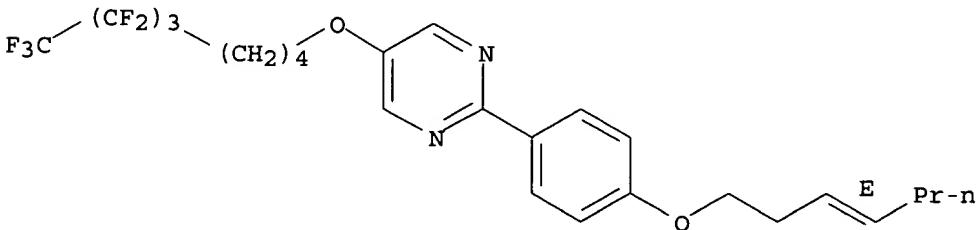
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 126162-76-3 126163-69-7 155468-60-3 308107-81-5 402860-34-8
 439866-35-0 460359-38-0 460359-39-1 460359-40-4 460359-42-6
460359-43-7 460359-44-8 460359-45-9 460359-51-7
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 479201-37-1 479201-38-2
 RL: TEM (Technical or engineered material use); USES (Uses)
 (liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)
 IT 2108-05-6, trans-3-Hepten-1-ol 2695-48-9, 8-Bromo-1-octene 20125-84-2
 56578-18-8, trans-5-Decen-1-ol 64275-73-6 460359-29-9
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (synthesis of liq. cryst. materials contg. perfluoroalkyl and alkenyl
 tail groups)
 IT **479201-23-5P 479201-24-6P 479201-25-7P**
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (synthesis of liq. cryst. materials contg. perfluoroalkyl and alkenyl
 tail groups)
 IT **479201-26-8P**
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)
 RN 479201-26-8 CAPLUS
 CN Pyrimidine, 5-[(5,5,6,6,7,7,8,8,8-nonafluorooctyl)oxy]-2-[4-[(3Z)-3-
 octenyl]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



IT **460359-43-7**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (liq. cryst. materials contg. perfluoroalkyl and alkenyl tail groups)
 RN 460359-43-7 CAPLUS
 CN Pyrimidine, 2-[4-[(3E)-3-heptenyl]phenyl]-5-[(5,5,6,6,7,7,8,8,8-
 nonafluorooctyl)oxy]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



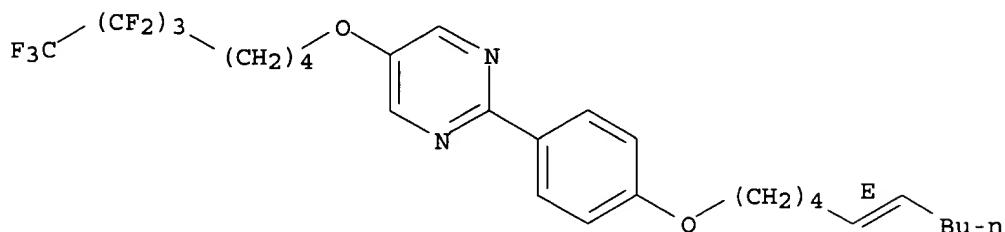
IT **479201-23-5P 479201-24-6P 479201-25-7P**
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material
 use); PREP (Preparation); USES (Uses)
 (synthesis of liq. cryst. materials contg. perfluoroalkyl and alkenyl

tail groups)

RN 479201-23-5 CAPLUS

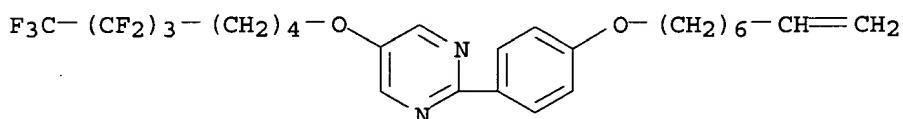
CN Pyrimidine, 2-[4-[(5E)-5-decenyloxy]phenyl]-5-[(5,5,6,6,7,7,8,8,8-nonafluoroctyl)oxy]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 479201-24-6 CAPLUS

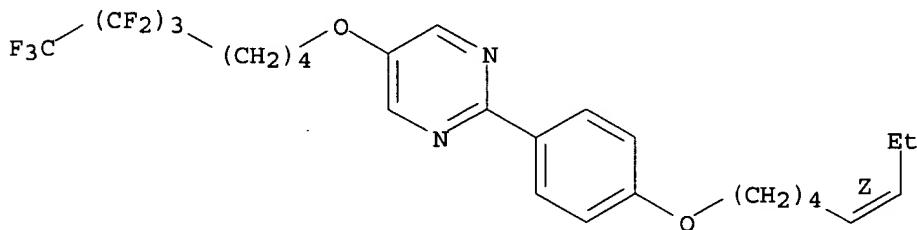
CN Pyrimidine, 5-[(5,5,6,6,7,7,8,8,8-nonafluoroctyl)oxy]-2-[4-(7-octenyloxy)phenyl]- (9CI) (CA INDEX NAME)



RN 479201-25-7 CAPLUS

CN Pyrimidine, 5-[(5,5,6,6,7,7,8,8,8-nonafluoroctyl)oxy]-2-[4-[(5Z)-5-octenyloxy]phenyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2003 ACS

AN 2002:716753 CAPLUS

DN 137:255487

TI Alkyl silane liquid crystal compounds

IN Wand, Michael; Gough, Neil; More, Kundalika; Thurmes, William N.; Chen, Xin-Hua

PA USA

SO U.S. Pat. Appl. Publ., 51 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM C09K019-34

ICS C09K019-20; C07F007-02; C07F007-21

NCL 252299610

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 75

FAN.CNT 1

PATENT NO.

KIND DATE

APPLICATION NO. DATE

copy ready

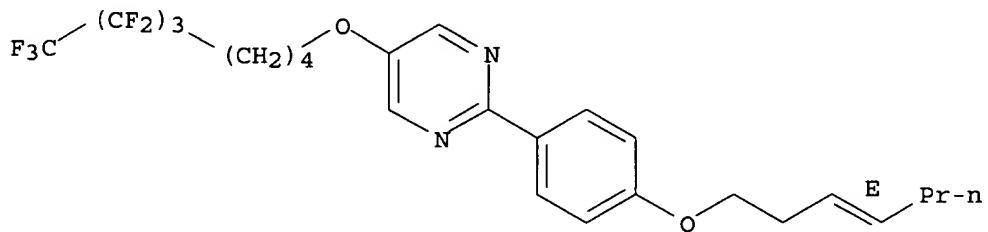
PI US 2002130299 A1 20020919 US 2001-754033 20010103
 PRAI US 2000-256063P P 20001215
 OS MARPAT 137:255487

AB The present invention relates to compds. useful as components of LC and FLC compns. which in turn are useful in the manuf. of optical devices. Compds. of this invention have a silane tail, which can contain more than one Si. Compds. of this invention can include those with disilane tails. The invention provides LC compns. contg. one or more of the silanes of this invention. Addn. of one or more of the compds. of this invention to LC compns. can result in significant improvement in optical or LC properties. In particular, the compds. of this invention can significantly lower the m.p., f.p. or both of an LC compn. resulting in significant improvement in device stability.

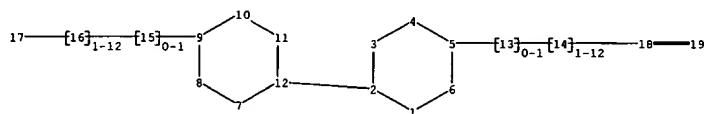
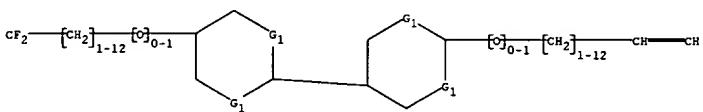
ST liq crystal optical device display
 IT Liquid crystal displays
 (alkyl silane liq. crystal compds. for)
 IT Liquid crystals
 (ferroelec.; prepn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT Ferroelectric materials
 (liq.-crystal; prepn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT Liquid crystals
 (nematic; prepn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT Liquid crystals
 (smectic A; alkyl silane liq. crystal compds.)
 IT Liquid crystals
 (smectic C; prepn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT 402860-34-8P 460359-01-7P 460359-02-8P 460359-03-9P 460359-04-0P
 460359-05-1P 460359-06-2P
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 IT 57202-41-2 57202-54-7 57202-58-1 121083-93-0 121218-85-7
 121218-90-4 126163-69-7 155468-60-3 155468-61-4 308107-81-5
 460359-38-0 460359-40-4 460359-41-5 460359-42-6 460359-44-8
 460359-45-9 460359-46-0 460359-52-8 460359-53-9 460359-56-2
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 IT 460359-18-6P 460359-20-0P 460359-21-1P 460359-22-2P 460359-24-4P
 460359-26-6P 460359-28-8P 460359-31-3P 460359-32-4P 460359-33-5P
 460359-34-6P 460359-35-7P 460359-36-8P 460359-37-9P 460359-96-0P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 IT 57202-48-9 120091-49-8 460359-39-1 460359-43-7 460359-47-1
 460359-54-0 460359-55-1
 RL: TEM (Technical or engineered material use); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 IT 1066-35-9, Chlorodimethylsilane 1066-54-2, (Trimethylsilyl)acetylene
 2344-80-1, Chloromethyltrimethylsilane 2695-48-9, 8-Bromo-1-octene
 13170-43-9, (Trimethylsilyl)methylmagnesium chloride 17196-12-2
 30102-73-9 58415-63-7, 4-(5-Octylpyrimidin-2-yl)-phenol 68535-55-7,
 2-(4-Hydroxyphenyl)pyrimidine 110203-06-0, 4-(5-Decyloxy-pyrimidin-2-yl)-
 phenol 124410-14-6 149396-77-0, 6-(4-Octyl-phenyl)-pyridin-3-ol
 179817-73-3 460359-00-6 460359-19-7 460359-23-3 460359-25-5
 460359-27-7 460359-29-9 460359-30-2
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (pregn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT 1189-75-9P 28681-61-0P 460359-07-3P 460359-08-4P 460359-09-5P

460359-10-8P 460359-11-9P 460359-12-0P 460359-13-1P 460359-14-2P
 460359-15-3P 460359-16-4P
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (prepn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT 460359-17-5P
 RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
 (prepn. of alkyl silane liq. crystal compds. for liq crystal display)
 IT 460359-43-7
 RL: TEM (Technical or engineered material use); USES (Uses)
 (alkyl silane liq. crystal compds. for liq crystal display)
 RN 460359-43-7 CAPLUS
 CN Pyrimidine, 2-[4-[(3E)-3-heptenyl]oxy]phenyl]-5-[(5,5,6,6,7,7,8,8,8-nonafluoroctyl)oxy]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



Co



chain nodes :
13 14 15 16 17 18 19

ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12

chain bonds :
2-12 5-13 9-15 13-14 14-18 15-16 16-17 18-19

ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12

exact/norm bonds :
1-2 1-6 2-3 2-12 3-4 4-5 5-6 5-13 7-8 7-12 8-9 9-10 9-15 10-11 11-12 13-14
14-18 15-16 16-17 18-19

G1:C,O,N

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS 18:CLASS 19:CLASS